

# ADDRESSING POVERTY THROUGH TECHNICAL TRAINING

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## **Abstract**

In the United States, the Millennial Generation has experienced economic instability and struggled to obtain financial security. An analysis of the current situation revealed that this generation has struggled to find sustained gainful employment and faced limitations in the ability to secure upward economic mobility. This is compounded by the increased cost of living and large student debt. Before offering potential solutions, this report outlined the actions taken by the U.S. Government, politicians, and companies to address the issues that face this generation. This focus of this proposal is to provide the Millennial Generation with the skills to obtain well-paying non-technical technology jobs. To do this, this proposal made the recommendation that the Department of Labor repurpose a small proportion of the Workforce Innovation and Opportunity Act (WIOA) for job training related to growing and in demand positions in the technology sector: Business Analyst, Project Manager, and Agile Scrum Master roles. These roles were focused on due to the large number of available jobs in the marketplace and the relatively low cost per certification for each skillset.

Advised by Paul Weinstein

## **TABLE OF CONTEXT**

|                             |           |
|-----------------------------|-----------|
| <b>List of Tables</b>       | <b>iv</b> |
| <b>List of Figures</b>      | <b>v</b>  |
| <b>Action Forcing Event</b> | <b>1</b>  |
| <b>Statement of Problem</b> | <b>1</b>  |
| <b>Background</b>           | <b>6</b>  |
| <b>History</b>              | <b>11</b> |
| <b>Policy Proposal</b>      | <b>14</b> |
| <b>Policy Analysis</b>      | <b>19</b> |
| <b>Political Analysis</b>   | <b>27</b> |
| <b>Recommendation</b>       | <b>31</b> |
| <b>Curriculum Vita</b>      | <b>33</b> |

## **List of Tables**

|   |    |
|---|----|
| Table 1 – Increase in median annual income since 1970                           | 8  |
| Table 2 – Increase in median annual rental cost since 1940                      | 9  |
| Table 3 – Median 1 Bedroom Rent in Major U.S. Cities in 2019                    | 9  |
| Table 4 – Increase in Median home value since 1940                              | 10 |
| Table 5 – Increase in Public and Private educational over the last 20 years     | 11 |
| Table 6 – Core educational components for proposed programs                     | 15 |
| Table 7 – Organizational costs associated with providing certification training | 16 |
| Table 8 – Skill specific certification and costs                                | 18 |
| Table 9 – Technology Job availability and salaries                              | 23 |
| Table 10 – Progressive salary and project taxable incomes chart                 | 25 |

## **List of Figures**

|  |    |
|--|----|
| Figure 1 - Intergenerational correlations between the earnings of fathers and sons in OECD countries | 4  |
| Figure 2 – Intergenerational Income Mobility   | 5  |
| Figure 3 – Relative Social Mobility of Wealthy Nations   | 6  |
| Figure 4 – Young Adult households match the highest household income on record for their age group   | 8  |
| Figure 5 – The impact of government programs on poverty numbers                                      | 12 |
| Figure 6 – Unemployment rates and earnings by educational attainment, 2018                           | 20 |
| Figure 7 – Reasons for I.T. Project Failures   | 22 |
| Figure 8 – IT executives identify 4 groups of issues that cause the most project failures            | 22 |
| Figure 9 – U.S. income by age  | 25 |
| Figure 10 – Automation exposure breaks sharply along demographic lines                               | 28 |
| Figure 11 – Jobs Automation Potential  | 28 |

To: U.S. Department of Labor, Eugene Scalia

From: Ibrahim Chaudhry

Addressing Poverty Through Tech Training  
**Action Forcing Event**

The United States of America is on the tail end of a decade of economic expansion and a decline in unemployment, but the Millennial generation has struggled to obtain solid economic footing. On May 21, 2019, the Washington Examiner cited resources that defined the Millennial generation is the most economically unstable since the Great Depression.<sup>1</sup> For the first time in recent history, the American dream is at risk for an entire generation. The current state of their economic situation has forced several to delay various milestones of adulthood, such as marriage, home ownership, and procreation.<sup>2</sup>

**Statement of Problem**

America's history is littered with rags to riches stories that captivated the imagination of the world and resulted in large influxes of immigrants into this country over the years. These stories have persisted throughout the nation's history, and many still believe the United States to be the "Land of Opportunity" that offers everyone a chance to move up in life.<sup>3</sup> But an examination of the current economic status of Millennial reveals an inability to obtain gainful employment that is able to address increased cost of living and large student debt liabilities.<sup>4</sup> Additionally, there are now significant limitations to upward economic mobility within the United States. Studies

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<sup>1</sup> Caitlin Yilek, *Struggling Millennials are poorest generation since WWII*, May 21, 2019.

<sup>2</sup> U.S. Census Bureau, *Young Adults Delay Milestones of Adulthood*, August 9, 2017.

<sup>3</sup> Jason DeParlie, *Harder for Americans to Rise from Lower Rungs*, January 2012.

<sup>4</sup> Dante Chinni, *The Real College Crisis: Student Debt drags down economy*, March 17, 2019.

have found an overall increase to income inequality over the last two decades, and this inequality have begun to cascade across generations and has been defined as permanent inequality.<sup>5</sup>

While millennials are earning higher income than their age group in previous generations, they are struggling to make ends meet.<sup>6</sup> The economic status of Millennials shows a fundamental difference compared to previous generations. From a balance sheet perspective, the Millennial generation face weaker assets (flat income, lack of savings, and other assets) in light of larger liabilities (consumer debt and student loans) than their predecessors.<sup>7</sup> To add insult to injury, Millennials have taken on at least 300% more student debt than their parents.<sup>8</sup> They are half as likely to own a home as adults of the same age in 1975. Additionally, 1 in 5 Millennials live under the poverty line.<sup>9</sup>

Upon examination of this issue, the overall impact can be reduced to two economic mobility subcategories: absolute mobility and relative mobility. Absolute Mobility is a measurement of whether (and by how much) living standards in a society has increased over time by determining the percentage of individuals with a greater income than their parents.<sup>10</sup> Relative Mobility is a measurement that refers to a person's economic status in relation to the nation as a whole.<sup>11</sup>

### *Absolute Mobility*

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<sup>5</sup> Brookings Institution, *Inequality Rising and Permanent Over Past Two Decades*, March 2013.

<sup>6</sup> Kathleen Elkins, *Millennial households are earning more money than ever before – here's why it may not be enough*, January 11, 2019.

<sup>7</sup> Reid Cramer, *Policy responses to the Millennial Wealth Gap: Repairing the Balance Sheet and Creating a new pathways to progress*, October 29, 2019.

<sup>8</sup> The College Board, *Trends in Student Aid 2018*, November 2018.

<sup>9</sup> Jonathan Vespa, *The Changing Economics and Demographics of Young Adulthood: 1975-2016*, April 2017.

<sup>10</sup> Pew Charitable Trusts Economic Mobility Project, *Pursuing the American Dream: Economic Mobility Across Generations*, August 2012.

<sup>11</sup> Isabel Sawhill, *Economic Mobility: Is the American Dream Alive and Well?*, May 2012.

As many parents do, there is a strong desire for children to have a better standard of living than their predecessors. And for generations, Americans have lived up to that desire. Overall, the American standard of living risen over time, and this has lifted essentially everyone's living standards some, even if it has not done much to change people's relative positions in society. In fact, 84% of Americans now have a higher income than their parents at the same age, when adjusted for both inflation and family size.<sup>12</sup> Interestingly, the group that has experienced the greatest improvement in terms of absolute mobility has been the bottom 20% of the American society with 93% of this group experiencing greater incomes and purchasing power than their previous generation.<sup>13</sup> While this is extremely positive, the relationship between father-son earnings is significant closer than other developed nations. The graph below depicts a stronger correlation between father-son earnings in America, than compared to other developed nations.<sup>14</sup>

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<sup>12</sup> Pew Charitable Trusts, *Economic Mobility Project*, July 2015.

<sup>13</sup> Pew Charitable Trusts, *Economic Mobility Project*, July 2015.

<sup>14</sup> Economic Policy Institute, *U.S. lags behinds peer countries in mobility*, October 2012.



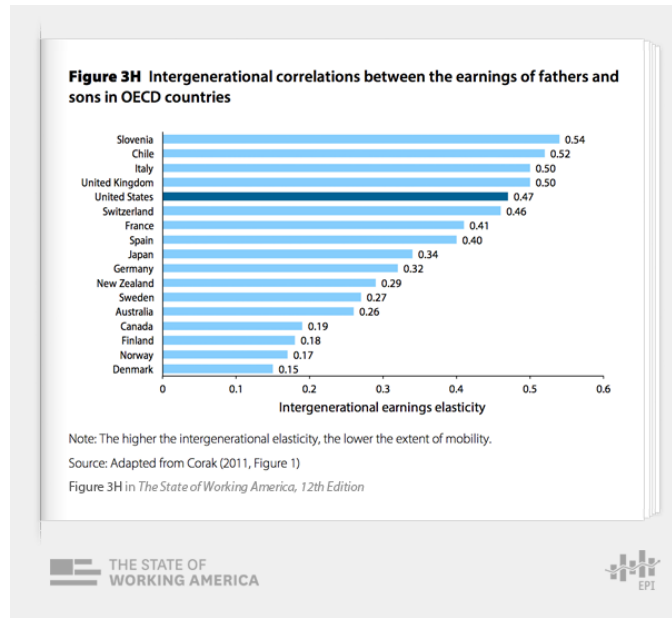


Figure 1

### *Relative Mobility*

While the intergenerational improvement can be a positive indicator for economic growth, it is also extremely beneficial to examine economic status improvement in relation to the nation as a whole. In order to measure this relationship, economists divided income distribution into quintiles. These quintiles are comprised of 20 percentile groups of the income distribution, from the bottom 20 percentile to the top 20 percentile.<sup>15</sup> For example, the graph below compared the income distribution of each quintile at birth and at the age of 40.

<sup>15</sup> The Brookings Institute, *Measuring relative mobility, part 2*, April 2015.

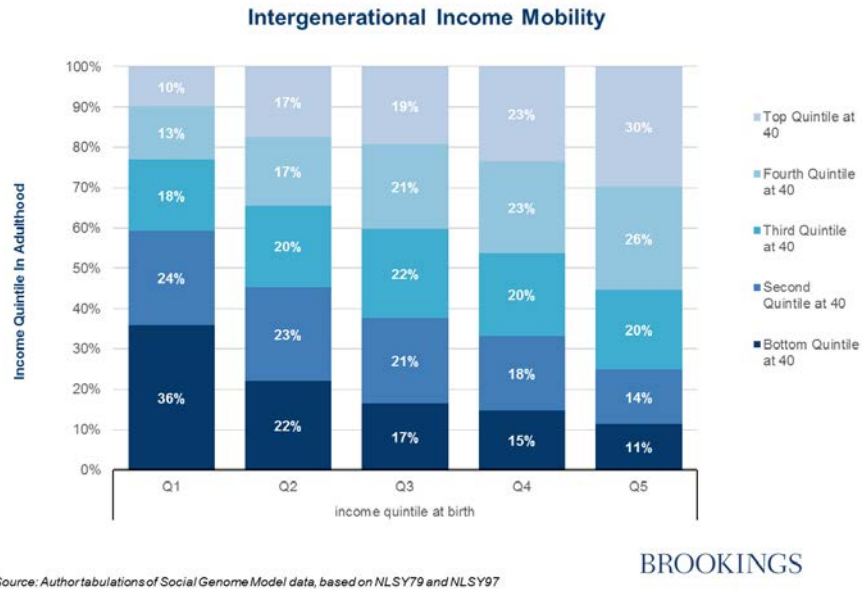


Figure 2

For the vast majority of American history, this nation provided the opportunity to move up within the income distribution quantiles and individuals achieved greater success than their parents and obtain higher economic status within the society.<sup>16</sup> Unfortunately, America lagged behind several countries in terms of relative mobility.<sup>17</sup>

<sup>16</sup> Opportunity Insights, *The Geography of Intergenerational Mobility in the United States*, June 2014.

<sup>17</sup> The Brookings Institution, *International Comparison of Economic Mobility*, July 2016.

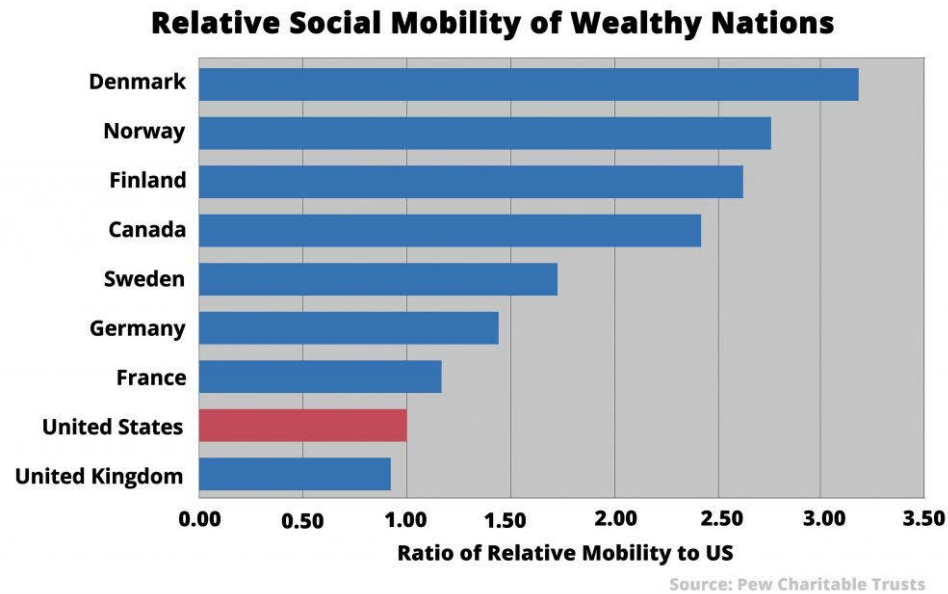


Figure 3

The current state of absolute and relative mobility created interesting challenges for policymakers. Firstly, economists derived that the combination of strong absolute mobility and weak relative mobility indicated Americans were not developing additional skillsets.<sup>18</sup> Secondly, the nation's strong absolute declined over the last two decades.<sup>19</sup> While Americans are doing better than their parents did at the same age, they are not better off than similarly sized families two decades ago. In fact, while the median family incomes families increased from \$61,526 to \$63,179 from 1999 to 2018 (when adjusted for inflation), their purchasing power has declined due to inflation and cost of living increases.<sup>20</sup>

## Background

<sup>18</sup> American Enterprise Institute, *Economic Mobility: Is the American Dream in Crisis?*, July 2019.

<sup>19</sup> The Brookings Institution, *Seven reasons to worry about the American middle class*, June 2018.

<sup>20</sup> Federal Reserve Bank of St. Louis, *Real Median Household Income in the United States*, September 2019.

As the previous section eluded, the current economic status of Millennial generation had multiple compounding factors: flat income levels, increased cost of living, large liabilities, and income inequality. This combination created an extremely bleak economic future for this generation.

### *Incomes vs. Cost of Living*

The American economy has experienced significant growth since 1970. In fact, Americans have benefited from a 67% increase in wages since then. Figure 4 depicts the income growth in recent U.S. history and how the Millennial generation is benefiting from that economic growth. According to Figure 4, Millennial households are taking home a median income of \$69,000.<sup>21</sup> While this may seem like a positive move, Millennial households tend to have both partners working. Table 1 expressed economic growth in the form of increased average annual income since 1970.<sup>22</sup> However, the median income for the average American is \$37,848 compared to \$27,003 for the average Millennial.<sup>23</sup> So while there has been an overall increase in wages, Millennials have not benefited in comparison to the increased living costs. Almost every aspect of life is more expensive than before. For example, housing and education costs have increased faster than incomes.

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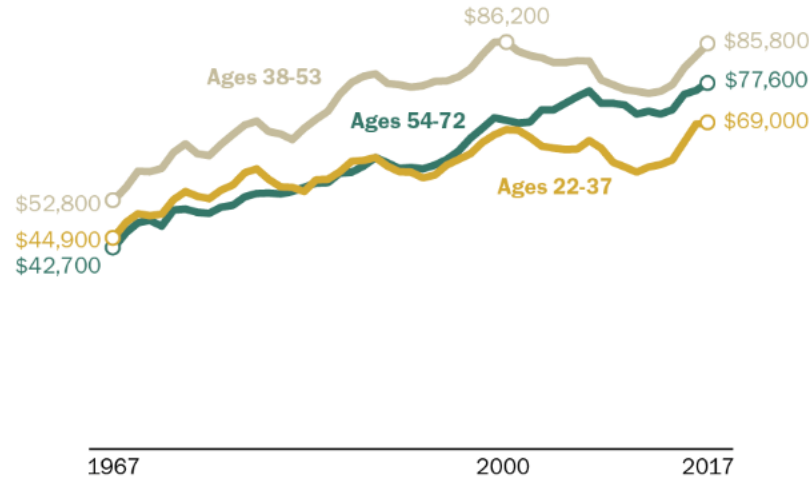
<sup>21</sup> PEW Research Center, *Young adult households are earning more than most older Americans did at the same age*, December 11, 2018.

<sup>22</sup> U.S. Census Bureau, *Historical Income Tables*, August 27, 2019.

<sup>23</sup> U.S. Census Bureau, *Fact Sheet: Differences Between the American Community Survey (ACS) and the Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC)*, May 16, 2016.

## Young adult households match the highest household income on record for their age group

*Median adjusted household income, in 2017 dollars and scaled to reflect a three-person household*



Note: Household incomes are adjusted for household size. The data for 2014 and beyond reflect the implementation of the redesigned income questions. Household incomes of the Silent Generation (currently ages 73 to 90) could not be accurately estimated due to the way those older than 79 are grouped in census data.

Source: Pew Research Center analysis of 1968-2018 Current Population Survey, Annual Social and Economic Supplement (IPUMS).

PEW RESEARCH CENTER

Figure 4

| Year | Average annual income | Value in today's dollars |
|------|-----------------------|--------------------------|
| 1970 | \$3,177               | \$20,410                 |
| 1980 | \$7,787               | \$24,306                 |
| 1990 | \$14,387              | \$27,423                 |
| 2000 | \$22,346              | \$32,147                 |
| 2010 | \$26,558              | \$29,763                 |
| 2016 | \$33,205              | \$34,035                 |

Table 1

Previous generations were able to rent at a significant lower amount. These lower prices allowed previous generations to save and afford a down payment on a house sooner. Table 2 showed that inflation adjusted median gross rent has almost doubled from 1940 to 2000.<sup>24</sup> While median gross rent has almost doubled, rents in larger cities have increased even further. Table 3 outlined the rental prices for one-bedroom apartments in some major cities.<sup>25</sup> For example, a one-bedroom apartment goes for \$2,486 in San Francisco.

| Year | Median gross rent | Cost in today's dollars |
|------|-------------------|-------------------------|
| 1940 | \$27              | \$471                   |
| 1950 | \$42              | \$434                   |
| 1960 | \$71              | \$588                   |
| 1970 | \$108             | \$693                   |
| 1980 | \$243             | \$758                   |
| 1990 | \$447             | \$852                   |
| 2000 | \$602             | \$866                   |

Table 2

| Year | City              | Median 1 Bedroom Rent |
|------|-------------------|-----------------------|
| 2019 | San Francisco, CA | \$2,486               |
| 2019 | New York, NY      | \$2,151               |
| 2019 | Cambridge, MA     | \$1,861               |
| 2019 | Chicago           | \$1,091               |
| 2019 | Los Angeles, CA   | \$1,370               |
| 2019 | Miami, FL         | \$1,084               |

Table 3

The increased rental costs limited the ability to save for a down payment. To add insult to injury, home values have also increased and made it even more difficult for

<sup>24</sup> U.S. Census, *Historical Census of Housing Tables*, October 21, 2011.

<sup>25</sup> Apartment List, *Apartment List National Rent Report*, October 29, 2019.

Millennials to become homeowners. Table 4 showed the significant increase in home values over the same time period.<sup>26</sup>

| Year | Median home value | Cost in today's dollars |
|------|-------------------|-------------------------|
| 1940 | \$2,938           | \$51,328                |
| 1950 | \$7,354           | \$75,993                |
| 1960 | \$11,900          | \$98,627                |
| 1970 | \$17,000          | \$109,213               |
| 1980 | \$47,200          | \$147,326               |
| 1990 | \$79,100          | \$150,773               |
| 2000 | \$119,600         | \$172,058               |

Table 4

In addition to the rise in cost of living, Millennials have encountered a unique problem: rising student debt amount. This increase resulted from soaring college costs. Many Millennials are unable to opt out of the college experience as more Americans obtained higher education. Millennials now need more education to compete in today's marketplace. As of 2019, the amount of outstanding student loan debt has surpassed the \$1.5 Trillion amount.<sup>27</sup> Currently, the costs of an undergraduate degree increased by 213% at public universities and by 129% at private universities.<sup>28</sup> Table 5 illustrated the rapid growth in college costs over the 40 years.<sup>29</sup>

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<sup>26</sup> Zillow, *United States Home Prices & Value*, August 31, 2019.

<sup>27</sup> U.S. Census Bureau, *Educational Attainment in the United States: 2018*, February 21, 2019.

<sup>28</sup> Hillary Hoffower, *College is more expensive than it's ever been, and the 5 reasons why suggest it's only going to get worse*, June 26, 2019.

<sup>29</sup> College Board, *Trends in college pricing 2019*, November 2019.

| Year      | Public  | Value in today's dollars | Private  | Value in today's dollars |
|-----------|---------|--------------------------|----------|--------------------------|
| 1987-1988 | \$1,490 | \$3,190                  | \$7,050  | \$15,160                 |
| 1997-1998 | \$3,110 | \$4,740                  | \$13,790 | \$21,020                 |
| 2007-2008 | \$6,190 | \$7,280                  | \$23,420 | \$27,520                 |
| 2017-2018 | \$9,970 | \$9,970                  | \$34,740 | \$34,740                 |

Table 5

These statistics highlighted the increased to rent, home, and education costs over the last several decades. This reinforced the concept that Millennials are presented with a bleak economic forecast. These increased costs put this generation in an extremely worrisome state. While wages increased, they were unable to keep up with the increased cost of living.

## History

There have been several efforts to address this bleak economic outlook for Millennials. These efforts have attempted to find solutions for their income, rent/housing prices, student debt and other aspects of their day to day lives. These solutions have come from a variety of places: Governmental programs, presidential candidates, startups, and nonprofits.

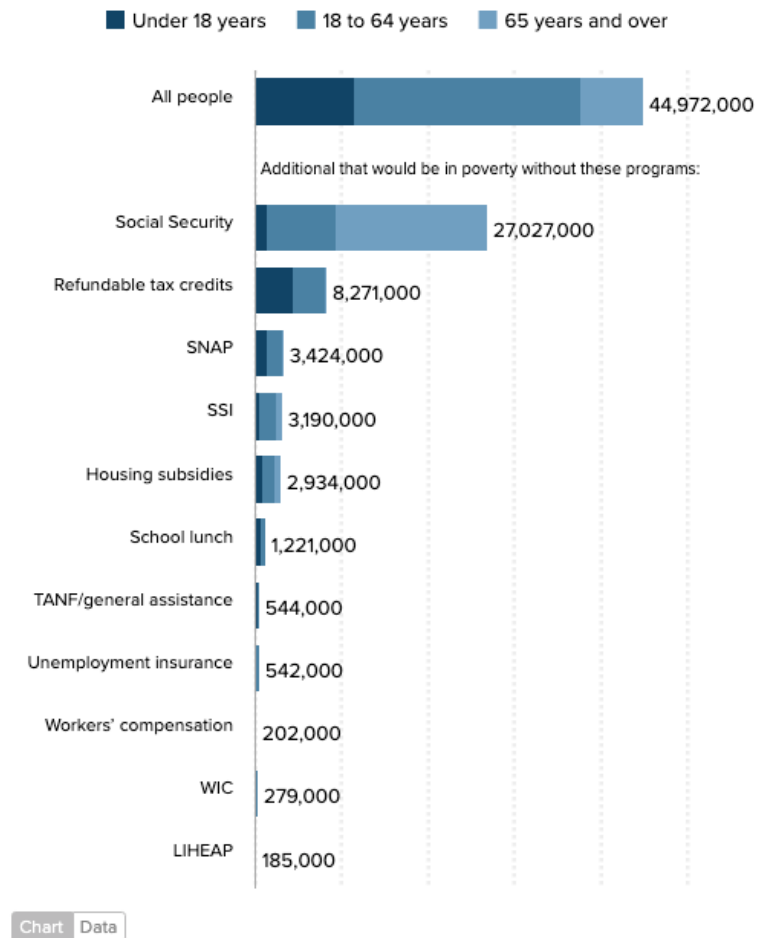
Governmental programs have been vital in driving down the official poverty rate over the last several years. This rate has declined every year since 2014, going from 14.8% in 2014 to 11.8% in 2018.<sup>30</sup> Figure 5 depicted the total number of U.S. citizens under the poverty line and the additional individuals that would be under the poverty line

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<sup>30</sup> U.S. Census Bureau, *Income and Poverty in the United States: 2018*, September 10, 2019.



without the listed governmental programs.<sup>31</sup> Based on these statistics, the removal of these programs will more than double the amount of Americans under the poverty line.



Source: EPI analysis of Liana Fox, *The Supplemental Poverty Measure: 2017*, U.S. Census Bureau report #P60-258, September 2018.

Figure 5

While Figure 5's statistics highlighted the impact that these programs, there are two concerning issues with these programs: budget allocation and program long term efficiency. With the nation struggling with ballooning national debt, recent budget proposals focused on cuts to these services. The 2020 budget maintained this approach by

<sup>31</sup> Economic Policy Institute, *The Supplemental Poverty Measure: 2017*, March 2018.

outlining a nearly \$125 billion reduction to discretionary spending over the next year.<sup>32</sup>

Unfortunately, these cuts continue to disproportionately impact the nation's most vulnerable citizens. The combination of the national debt and the recent national budget direction signify a shift in government funding that would be extremely hard to reverse. It can be concluded that economic relief for Millennials will not be driven solely by an influx of funds. Rather, existing funds can be leveraged to give this generation a brighter economic future.

Several presidential candidates have based their platforms on providing economic assistance to the Millennial generation. The most notable form of economic assistance is the concept of student loan forgiveness. This issue is predominately focused on assisting Millennials, since their generation owns the majority of the student debt in this country. While this idea is appealing, total loan forgiveness seems unlikely due the enormous amount outstanding and lack of alternative revenue streams to cover this debt.<sup>33</sup>

With difficulty of implementing massive loan forgiveness, there are several organizations that used technology to help struggling Americans. These companies offered more affordable education through massive open online courses (MOOCs). These companies, such as Coursera and Edx, significantly reduced costs due to their delivery model. They evolved their offerings and formed partnerships with universities to offer degrees online at a discounted price.<sup>34</sup> The Master of Computer and Information Technology from the University of Pennsylvania is a prime example, this degree is over

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<sup>32</sup> Committee on the Budget, *Issue Brief: The Devastating Consequences of the 2020 and the 2021 Budget Caps*, April 2, 2019.

<sup>33</sup> Kayla Webley, *Why Can't you discharge student loans in Bankruptcy?*, February 9, 2012.

<sup>34</sup> Jordan Friedman, *7 ways to reduce the cost of an online degree*,

\$70,000 onsite and only \$26,300 through Coursera's online platform.<sup>35</sup> While these companies reduced the cost of education, these programs are still within their infancy and the long term ROI of these programs and their reputations are to be determined.

Other companies focused on addressing the other problems that the Millennial generation has experienced. Kairos Venture is an investment company focused on investing in companies are working to solve these issues.<sup>36</sup> They have invested in companies that reduced the financial commitment to rent an apartment by replacing a security deposit with insurance and offered monthly subscriptions for affordable baby food. They have several other ventures that aim to lower the cost of living for the Millennial generation.<sup>37</sup>

Other organizations focused on individual skills development. Programming bootcamps offered a fast track into the growing technology sector and a near 6-figure salary.<sup>38</sup> Unfortunately, programming has a steep learning curve and has a negative stigma that turned many people off from pursuing these opportunities.<sup>39</sup>

While these examples have begun to turn the tide, their success rates are yet to be ascertained. The mere existence of these programs represented a shift in the country's outlook and displayed a desire to find a solution.

## **Policy Proposal**

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<sup>35</sup> Courtney Becker, *University of Pennsylvania to offer fully-online master's program in computer science*, July 2018.

<sup>36</sup> Fitz Tepper, *Kairos' \$25M venture fund will invest in ideas that help the middle class*, November 16, 2017.

<sup>37</sup> Matthew Michaels, *A venture fund focused on middle-class problems is tackling a huge obstacle for millennial renters*, February 28, 2018.

<sup>38</sup> Anya Kemenetz, *Coding Bootcamps Emerge as Fast Tracks to 6 Figure Salaries*, December 12, 2014.

<sup>39</sup> Alexander Petkov, *Why so Many Developers Quit Before Ever Getting a Job*, January 27, 2018.

While there are multiple options to address these issues, I propose training and certifying members of the Millennial generation on three skillsets: Business Analysis, Project Management, and Agile Software Development. These training will be focused on the components that are outlined in Table 6 below. Many of these skills are transferable and will allow these members of the Millennial generation to find success in multiple fields.

| Components | Business Analysis   | Project Management                        | Agile Software Development     |
|------------|---|---|--------------------------------|
| 1          | Introduction to IT<br>Introduction to the Business Analyst role | Organizing the Project and Its Components | Agile Methodology              |
| 2          | SDLC<br>Waterfall   | Planning and managing resources           | Software Development Lifecycle |
| 3          | Agile Methodology   | Assessing, Managing, and Mitigating Risk  | Agile Methods                  |
| 4          | Kicking off a Project   | Return of Investment                      | Agile Scrum                    |
| 5          | Requirement Gathering   | Agile Project Management                  | Extreme Programming            |
| 6          | Design and Development  | Certification Prep                        | Common Issues and Concerns     |
| 7          | Deployment and Maintenance                                      | Practice Project                          | Scaling Agile                  |
| 8          | Interview Preparation   | Interview Preparation                     | Interview Preparation          |

Table 6

In order to ensure quality of these programs, the organizations that offer these training programs must obtain partnership status with the certification granting organization in each discipline. Each certification granting body requires that their partners have at least one individual with a training certification and to submit their course material for review. By enforcing this requirement, we place the responsibility of quality onto organizations that are thought leaders in their industry. Table 7 depicts each

organization and the cost associated for partner status. The IIBA, PMI, and Scrum Alliance each have extensive requirements for organizations that are approved to train in their disciplines. These stringent requirements ensure that these organizations maintain employ qualified trainers and will provide us confidence in working with them.

| Skill Set                  | Certification Organization | Cost  |
|----------------------------|----------------------------|---|
| Business Analysis          | IIBA                       | Initial Fee: \$2250<br>Annual Renewal Fee: \$2000 <sup>40</sup>     |
| Project Management         | PMI                        | Initial Fee: \$3450<br>Annual Renewal Fee: \$3100 <sup>41</sup>     |
| Agile Software Development | Scrum Alliance             | Initial Fees: \$9,199<br>Annual Fees: 20% of Revenues <sup>42</sup> |

Table 7

This proposal focuses around leveraging the infrastructure that the Department of Labor created to support the Workforce Innovation and Opportunity Act (WIOA). WIOA has provided funding for unemployed adults to obtain certifications/additional training to improve their ability to obtain employment.<sup>43</sup> Currently, WIOA has \$10.5 billion of funding per year and has showed promising returns. But this program lacks a clear skill development pathway and clear job placement goals. Essentially, it is a one-time grant that allows the individual to pursue any certification without a clear understanding of the ROI. Thus, leaving individuals at a crossroads without a clear direction forward. Unfortunately, this uncertainty creates an atmosphere where organizations can take

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<sup>40</sup> IIBA, *Endorsed Education Provider Program Handbook*, August 2019.

<sup>41</sup> PMI, *Registered Education Provider Program*, November 2018.

<sup>42</sup> Scrum Alliance, *Scrum Alliance® Registered Education Provider (REP)*, September 2019.

<sup>43</sup> U.S. Department of Labor, *Workforce Innovation and Opportunity Act; Joint Rule for Unified and Combined State Plans, Performance Accountability, and the One-Stop System Joint Provisions; Final Rule*, August 19, 2016.

advantage of unwitting individuals and collect their WIOA grant without providing significant value.

The change that I proposal would to create a clear linear certification process and establish a partnership with companies that are in dire need of these skill sets. This proposal would repurpose 6% (\$650 Million) of their budget for this initiative. This would allow country to offer this program to half a million Americans. This is significant because recent supports show that half a million technology jobs remain empty due to lack of trained individuals, this would fill a need present in the marketplace.<sup>44</sup>

The goal of this policy is that these Millennials will earn in the over \$57,065 annually, or in the Top 50% of the country, within 5 years.<sup>45</sup> This would be to shift Millennials from the median salaries for their age range to above the average salary for the country. This would be extremely impactful, since it would greatly increase the income of certain individuals within Millennial age group and allow them the financial flexibility to pay off debt and begin to accumulate assets.

Table 8 depicts the job function and the cost for to sit for each certification exam. In terms of certification costs, a total investment of \$745-\$1000 would be enough to provide an individual with the tools and credentials to obtain a non-programming technology job. Based on the average profit margins for these courses, 30% of the budget will be allocated for administrative costs and teacher salaries.<sup>46</sup>

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<sup>44</sup> Jenny Dearborn, *Half a million empty tech jobs and growing*, September 16, 2018.

<sup>45</sup> U.S. Census Bureau, *HINC-06. Income Distribution to \$250,000 or More for Households*, September 2017.

<sup>46</sup> Sharon Florentine, *ROI of IT Training*, July 7, 2016.

| Role               | Certifying organization | Certification                        | Cost for certification                                  |
|--------------------|-------------------------|--------------------------------------|---|
| Business Analyst   | IIBA                    | ECBA                                 | \$295 <sup>47</sup>                                     |
| Project Manager    | PMI                     | CAPM (Entry)<br>PMP<br>(Experienced) | \$300 (CAPM) <sup>48</sup><br>\$555 (PMP) <sup>49</sup> |
| Agile Scrum Master | Scrum Alliance          | CSM                                  | \$1099 <sup>50</sup>                                    |

Table 8

In terms of timeline of this implementation, this training can be done remote and provided online if required. For the first year, benchmarks should be established to provide incentive for individuals to complete the courses in a timely manner and sit for the certification exam. Each student will be given 120 days to complete each course and apply to sit for the certification exam. If the student were to stagger these courses, that individual will have at least 360 days to complete each course and apply for each exam. Therefore, the success metrics should be aligned to that timeline. The first definition of success for an organization providing this training would be the percentage of students completing their courses and passing their exams within 1 year. In order to complete this training, the student should commit to 1 year of part time study. 20-40 hours class time and self-study a month has historically been enough to develop a grasp of the foundational concepts of these disciplines.<sup>51</sup>

In terms of the overall program and the commitment to the Millennial generation and beyond, there should be a 10-year commitment to this program for a variety of reasons. Firstly, the economy is becoming more technology based and these roles are

<sup>47</sup> IIBA, *ECBA Exam costs*, December 21, 2017.

<sup>48</sup> PMI, *Certified Associate in Project Management (CAPM)*, October 31, 2019.

<sup>49</sup> PMI, *Project Management Professional (PMP)*, October 21, 2019.

<sup>50</sup> Scrum Alliance, *Certified Scrum Master*, November 27, 2019.

<sup>51</sup> Sanjeev Ramani, *How to pass IT Certifications: Self Study: Thoughts & Tactics*, January 31, 2018.

growing in demand every year. Secondly, these roles provide skillsets that can be transferred into almost any other sector. Thirdly, these roles are steppingstones into more senior roles than provide even larger salaries.

### **Policy Analysis**

In order to analyze this solution, we need to revisit the problem, which is Millennials are in an extremely difficult economic situation. While there are several variables that influence their economic state, this proposal is focused on providing training so that the poorest of the generation can begin to obtain employment in one of the fast growing and financially rewarding sectors of the economy.<sup>52</sup>

The Information Technology sector is a rapidly growing field and provides many opportunities for advancement. In fact, this sector of the economy is projected to grow by 12% (546,000) new jobs by 2028 with a median annual salary of \$86,320.<sup>53</sup> With the rapid expansion of this area of the economy, it would be logical for the government to invest in skill development for these roles so that these positions will not have to be outsourced due to a lack of talent domestically.

### *Cost*

While other sectors of the economy are also expanding, the barrier to entry in I.T. tends to be lower. This proposal outlines a plan to obtain 3 high value certifications, which will provide the average person with the credentials and skillset to break into the industry. The cost of all 3 certifications would be around \$1,000, at most. In comparison, the average annual cost for a 4-year undergraduate degree at a public university is

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<sup>52</sup> U.S. Department of Labor, *Industries with the fastest growing and most rapidly declining wage and salary employment*, September 4, 2019.

<sup>53</sup> U.S. Department of Labor, *Computer and Technology Occupations*, September 4, 2019.



\$17,237.<sup>54</sup> The certification route would cost the student \$16,237 less and would allow them to realize the ROI on their investment sooner.

Unfortunately, it is unlikely that the student could avoid obtaining their undergraduate degree completely. While the student could leverage these courses to obtain a position in the I.T. Sector, the student would most likely need to obtain an undergraduate and master's degree in order to progress to higher positions within the field. In fact, those with a college degree have nearly an 80% earning advantage over individuals with just a high school diploma or GED.<sup>55</sup> Figure 6 illustrates the importance of higher education in terms of unemployment rate and median weekly salary.<sup>56</sup>

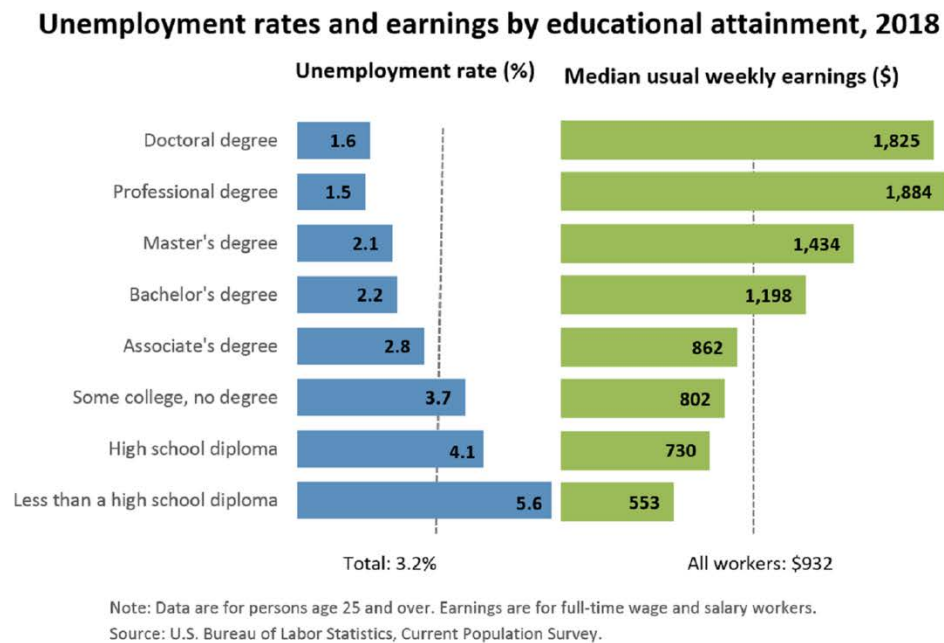


Figure 6

<sup>54</sup> National Center for Education Statistics, *Tuition Costs of Colleges and Universities*, September 15, 2017.

<sup>55</sup> Stephen Rose, *The Value of a College Degree*, November 20, 2013.

<sup>56</sup> U.S. Department of Labor, *Unemployment rates and earning by educational attainment*, September 4, 2019.

This proposal focuses around leveraging the funds available through the Workforce Innovation and Opportunity Act (WIOA). WIOA is a program that provides funding for unemployed adults to obtain certifications/additional training to improve their ability to obtain employment.<sup>57</sup> The re-appropriation of 6% of their budget will allow us to help train half a million US citizens for careers in the Technology sector.

**Number of students X Cost of Certifications Per Student = Total Cost of Certifications**

$$500,000 \times \$1,000 = \$500,000,000$$

**Total amount requested – Total cost of certifications = Funding for Admin Costs**

$$\$650,000,000 - \$500,000,000 = \$150,000,000$$

With multiple technology certifications available, one may wonder what evidence exists to show that these three skillsets are the required to obtain the outlined goal? While these skillsets are not directly related to coding, they play a significant role in preventing project failure. A project is considered a failure if it did not deliver the requirements, within the estimated cost, on time, in good quality.<sup>58</sup> *Gallup* estimated IT project failure rates between 5-15% from 2008-2012, which correlated to a loss of \$50 billion to \$150 billion per year in the United States.<sup>59</sup> Figure 7 displays the result of an analysis of failed projects by the *Standish Group* attributed 46% to issues that can be addressed through the soft skills that a Business Analyst, Project Manager, or a Scrum Master can provide.<sup>60</sup>

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<sup>57</sup> U.S. Department of Labor, *Workforce Innovation and Opportunity Act; Joint Rule for Unified and Combined State Plans, Performance Accountability, and the One-Stop System Joint Provisions; Final Rule*, August 19, 2016.

<sup>58</sup> Project Management Institute, *Seven Causes of Project Failure*, July 2007.

<sup>59</sup> Gallup, *The Cost of Bad Project Management*, February 7, 2012.

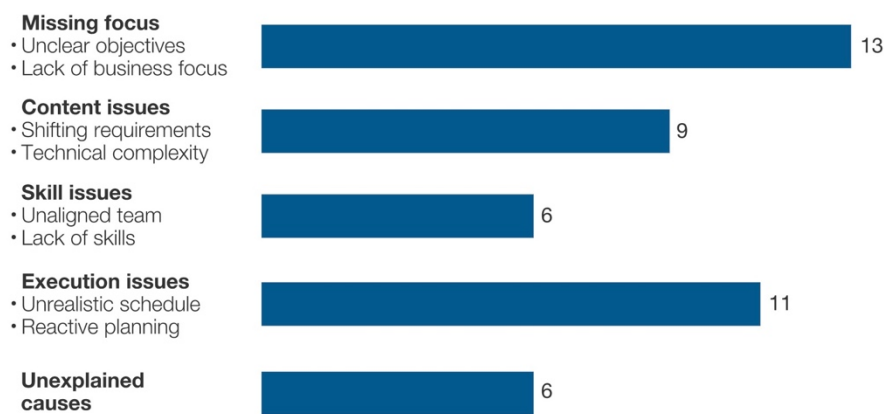
<sup>60</sup> The Standish Group, *The Standish Group Report: Project Smart*, 2014.

| Project Impaired Factors                  | % of Responses |
|---|----------------|
| 1. Incomplete Requirements                | 13.1%          |
| 2. Lack of User Involvement               | 12.4%          |
| 3. Lack of Resources                      | 10.6%          |
| 4. Unrealistic Expectations               | 9.9%           |
| 5. Lack of Executive Support              | 9.3%           |
| 6. Changing Requirements & Specifications | 8.7%           |
| 7. Lack of Planning                       | 8.1%           |
| 8. Didn't Need It Any Longer              | 7.5%           |
| 9. Lack of IT Management                  | 6.2%           |
| 10. Technology Illiteracy                 | 4.3%           |
| Other                                     | 9.9%           |

Figure 7

IT executives identify 4 groups of issues that cause most project failures.

Rough distribution by cause of the 45% of IT projects that experience cost overruns (for those with budgets >\$15 million in 2010 dollars), %



IT projects with budgets >\$15 million

Figure 8

Figure 8 provides additional context and validity to this impact.<sup>61</sup> This data displays the impact of those same areas on large IT projects the exceed \$15 million. As such, these roles can have a significant impact in preventing IT Project Failure. By potentially addressing 46% of project failure, individuals with these skillsets can help prevent U.S. companies from losing up to \$23 billion to \$69 billion annually. Money that can be utilized to generate growth in various sectors in the nation’s economy. With this level of impact, the demand for talented individuals in these roles has expanded every year. Table 9 outlined the availability and salary for each of these roles.

| Role               | Job Positing National | Average National Salary |
|--------------------|-----------------------|-------------------------|
| Business Analyst   | 97,589 <sup>62</sup>  | \$76,109 <sup>63</sup>  |
| Project Manager    | 118,023 <sup>64</sup> | \$88,699 <sup>65</sup>  |
| Agile Scrum Master | 104,992 <sup>66</sup> | \$106,791 <sup>67</sup> |

Table 9

### *Transferable Skills*

There are several characteristics of a successful business analyst, project manager, and scrum master. An analysis of individuals successful at these roles found 6 core skills necessary to thrive in these roles: leadership, communication, verbal and written skills, attitude, the ability to deal with ambiguity, and the ability to deal with change.<sup>68</sup> These core skills are developed through working on big projects that involve multiple resources

<sup>61</sup> McKinsey Digital, *Delivering large-scale IT projects on time, on budget, and on value*, October 2012.

<sup>62</sup> Indeed.com, *Business Analyst jobs in the United States*, December 10, 2019.

<sup>63</sup> Glassdoor, *Business Analyst Salaries*, October 28, 2019.

<sup>64</sup> Indeed.com, *Project Manager jobs in the United States*, December 10, 2019.

<sup>65</sup> Glassdoor, *Project Manager Salary*, November 27, 2019.

<sup>66</sup> Indeed.com, *Agile Scrum jobs in the United States*, December 10, 2019.

<sup>67</sup> Glassdoor, *Scrum master Salaries*, December 9, 2019

<sup>68</sup> Deborah Stevenson and Jo Ann Starkweather, *PM Critical competency index: IT execs prefer soft skills*, October 2010.

and stakeholders. Oftentimes project managers, for example, are the glue that keep the project on track and on target.<sup>69</sup> Once developed, these skills can be effectively leveraged in almost any other field and allow that individual to be successful.

Even though these skills are extremely valuable across industries, individuals that pivot into another sector may struggle with the steep learning curve associated with their new positions. Often times, individuals that make this leap are awarded leadership roles due to their experience and skillset but they may not have the industry specific knowledge to be as effective as their peers.<sup>70</sup> As such, these individuals require additional education or training to be able to fully utilize the skillsets they developed and be able to thrive in their new industries.

#### *Investment and ROI*

As mentioned above, the government would benefit from investing in training this generation to obtain roles in a sector that is growing rapidly and compensates competitively. While the impact on the individual's life has been expanded on, the return on investment for the government in terms of increased taxable income should be examined further. Figure 9 shows that the median income for various age ranges.<sup>71</sup> Table 9, highest the gap between the median income and the salary within an IT role with a 2% annual raise. As you can see, Table 9 shows the staggering difference in taxable income that would be available to the government for each person that enters and remains in the IT sector in their career from 25 to 65 years of age.<sup>72</sup>

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<sup>69</sup> Tracy Richardson and Matthew Earnhardt, *Is Project Management still an Accidental Profession? A Qualitative Study of Career Trajectory*, February 17, 2015.

<sup>70</sup> Dr. Ince Wichert, *Avoiding the pitfalls of accelerated leadership development*, July 24, 2018.

<sup>71</sup> Nick Routley, *Visualizing American income levels by age group*, December 5, 2018.

<sup>72</sup> Internal Revenue Service, *Revenue Procedure 2018-57*, November 15, 2018.

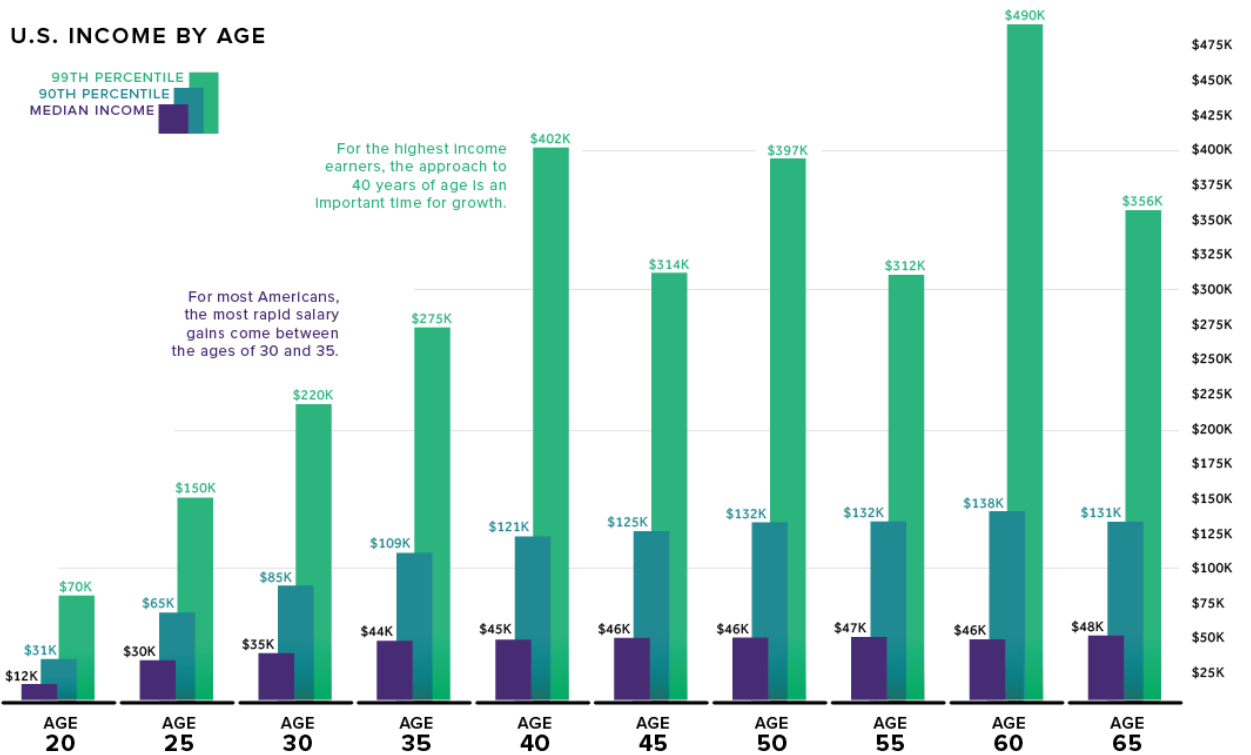


Figure 9

| Age | Median Salary | Taxable Income | IT Salary<br>(+2% raise<br>every year) | Taxable Income | Difference in<br>Taxable income |
|-----|---------------|----------------|--|----------------|---------------------------------|
| 25  | \$30,000      | \$4,237        | \$76,109                               | \$19,398       | \$15,161                        |
| 30  | \$35,000      | \$6,842        | \$84,030                               | \$22,139       | \$15,297                        |
| 35  | \$44,000      | \$9,056        | \$92,776                               | \$25,165       | \$16,109                        |
| 40  | \$45,000      | \$9,302        | \$102,432                              | \$28,626       | \$19,324                        |
| 45  | \$46,000      | \$9,548        | \$113,093                              | \$32,528       | \$22,980                        |
| 50  | \$46,000      | \$9,548        | \$124,864                              | \$36,837       | \$27,289                        |
| 55  | \$47,000      | \$9,794        | \$137,860                              | \$41,247       | \$31,453                        |
| 60  | \$46,000      | \$9,548        | \$152,209                              | \$45,648       | \$36,100                        |
| 65  | \$48,000      | \$10,040       | \$168,051                              | \$50,464       | \$40,424                        |

Table 10

While Table 10 does depict the potential income for an individual assuming a modest raise of 2% annually, it also assumes that the climate remains the same and that the individual continues to grow and develop in their career. It is a bold assumption to

assume that the average individual would continue to earn raising without adding additional skillsets or defining other ways to provide value to the company.

There are two limiting factors to the projections in Table 10. The first limiting factor is that it is extremely difficult to earn more than \$130,000 in the I.T. sector without having multiple specialties and obtaining multiple promotions.<sup>73</sup> The second limiting factor is that ageism is a topic of conversation within the Tech sector and very few individuals last past the age of 45. Making the projection in the bottom half of Table 10 suspect for the vast majority of individuals within the field.<sup>74</sup> As such, these very same individuals may require additional training in the future in order to continue to have a viable income as they near retirement. Additionally, this is another cost for a government that is already significantly in debt and is looking to cut cost are it more forward into the 2020's.<sup>75</sup>

### *Interesting and Desire*

To succeed or thrive in any field, it requires significant time and effort. Malcolm Gladwell argues that it requires 10,000 hours to achieve mastery within any given field.<sup>76</sup> In order to achieve that amount of hours, it would require a significant commitment over an extensive period of time. For some individuals, the financial reward would be sufficient to continue down the path that this proposal presents. In fact, some may discover a passion for this field and take additional training in order to achieve greater height in this industry.

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<sup>73</sup> Zack Andresen, *5 Tech Jobs with 150 Annual Earning Potential*, June 28, 2017.

<sup>74</sup> Howard Williams, *Ageism in Tech: the not-so-invisible age limit developers face*, March 29, 2019.

<sup>75</sup> Tara Golshan, *Trump's 2020 budget proposal seriously guts the nation's safety net*, March 11, 2019.

<sup>76</sup> Malcolm Gladwell, *Outliers: The Story of Success*, November 18, 2008.

Unfortunately, that is not always the case. The vast majority of the population tend to allocate time for the things that they are passionate about and reduce the time that they commit to thing that do not excite them. If anything, understanding an individual's 'why' can help them understand their purpose and be able to become the best in the field that truly resonates with their morals and beliefs.<sup>77</sup>

### **Political Analysis**

Security Scalia, the United States is at a crossroads in the labor market. The rapid expansion of the technology sector and the increasing automation of jobs are leaving many individuals unemployed and continued growth and development in those areas threaten more jobs. In terms of risk, 25% of U.S. jobs could be impacted or replaced completely by automation.<sup>78</sup> While a quarter of U.S. jobs can be impacted, the impact is not uniform. Figure 10 illustrates the impact of automation across men and women and minorities.<sup>79</sup> Figure 11 provides additional insight into the actual jobs that can be impacted through the continued growth and development of the technology sector.<sup>80</sup> It is now very apparent the technology sector will continue to be a big player on the nation's economic future, and it would ensue that the country would desire to remain competitive in this ever changing landscape. As the head of the Department of Labor, you are sure to have come across these statistics before and are contemplating approaches to ensure the continued viability of the U.S. economy.

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<sup>77</sup> Simon Sinek, *Start with Why: How Great Leaders Inspire Everyone to Take Action*, 2009.

<sup>78</sup> Mark Muro and Jacob Whiton, *Automation and Artificial Intelligence: How machines are affecting people and places*, January 24, 2019.

<sup>79</sup> Metropolitan Policy Programs at the Brookings Institute, *Automation and Artificial Intelligence*, January 2019.

<sup>80</sup> McKinsey Company, Estimate of the Sector's overall automation potential, January 1, 2017.



**Automation exposure breaks sharply along demographic lines**  
Average automation potential by gender and race, 2016

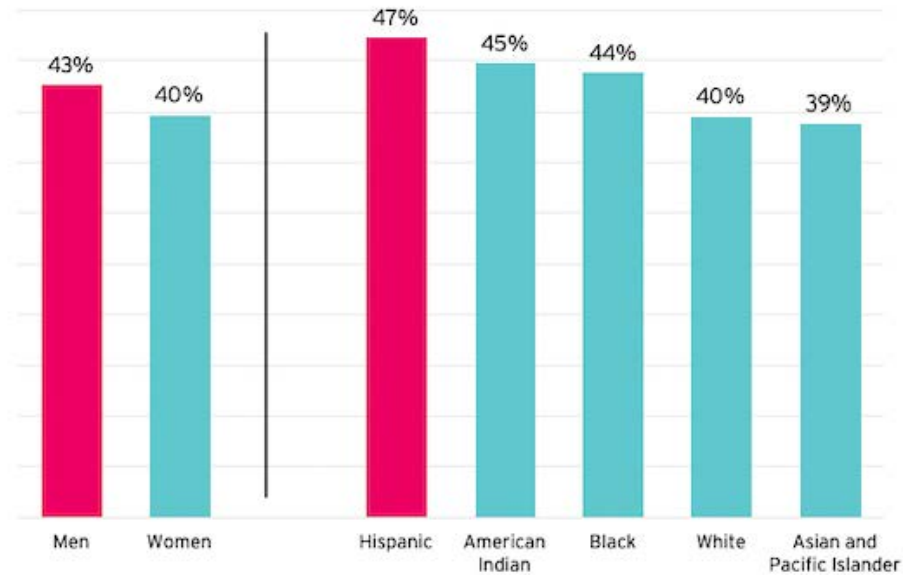


Figure 10

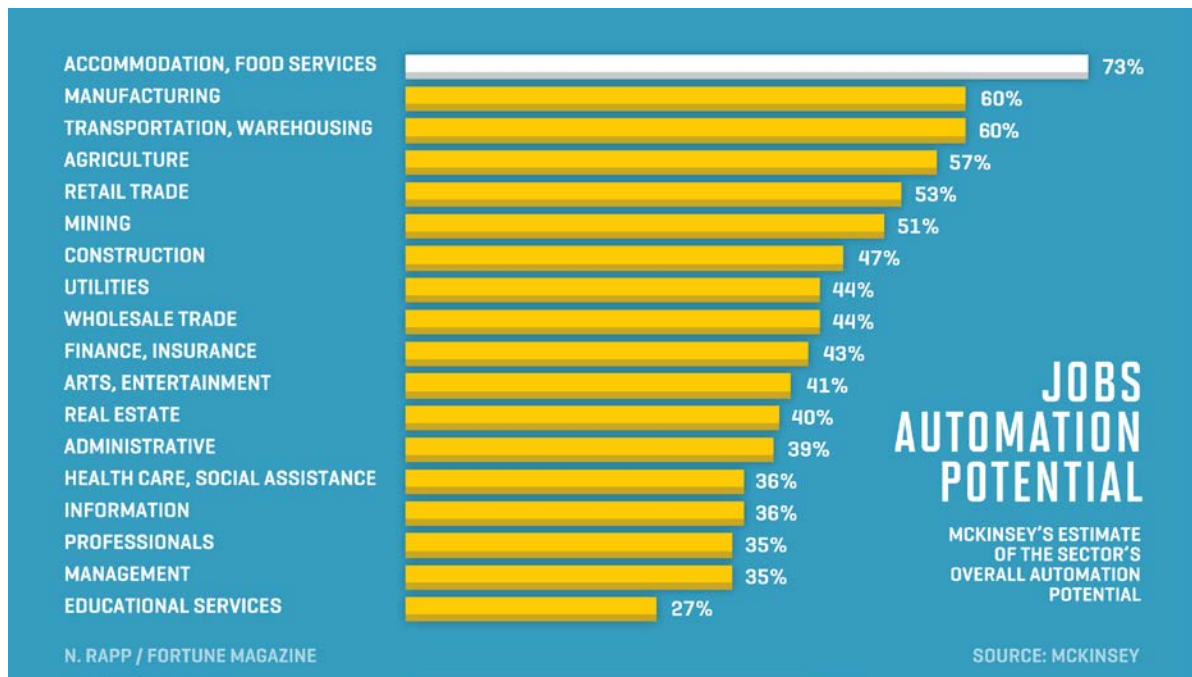


Figure 11

As a graduate of University of Chicago Law School, you exposure to your non-law school peers probably gave you insight into the power of technology and analytics

when you were a student.<sup>81</sup> Your long record of defending major corporations against financial and labor regulations also provided you with an insight into the thoughts and minds of the leaders of the biggest U.S. companies.<sup>82</sup> Those insights will be vital in your current role and will assist you in understanding the needs of the companies within our country.

Security Scalia, your critics state that your career was built on representing various organizations in their fight against health and safety regulations, retirement security and collective bargaining right for workers. These critics state that you do not have the best interest of the American Worker in mind.<sup>83</sup> But you have shifted some of the focus of the Department of Labor to employment retirement savings, thus showing that you are willing to find a balance between regulations and the needs of the average American.<sup>84</sup> As such, it can be reasoned that you may be receptive to proposals that would empower Americans with skills to thrive in today's market place and reduce the reliance on employer benefits.

This proposal is not a comprehensive solution to the challenges that face the Department of Labor, but this proposal has the potential to provide positive momentum for the struggling Millennial generation. As stated above, an investment in training individuals on the non-programming technical jobs can provide a long-term ROI for the nation, the economy, and U.S. citizens.

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<sup>81</sup> U.S. Department of Labor, *U.S. Secretary of Labor Eugene Scalia Sworn into Office*, September 30, 2019.

<sup>82</sup> Jeff Stein and Rachel Siegel, *Eugene Scalia has defended Wall Street, Walmart and SeaWorld. Now he's Trump's pick for labor secretary*, July 19, 2019.

<sup>83</sup> Economic Policy Institute, *Why Eugene Scalia is the wrong person for the job*, August 1, 2019.

<sup>84</sup> Brian Croce, *Eugene Scalia ready to tackle the challenges at the Labor Department*, September 30, 2019.

While the proposal is founded on the growth trajectory of the economy, it goes against several agenda points of President Trump's Administration and Congress. While President Trump's Administration is focused on recreating manufacturing jobs within the United States, Congress is focused on reducing the federal budget due to the massive amount of federal debt. Unfortunately, Trump's push to recreate those manufacturing jobs have shown limited results and the jobs that have been added have not be in the areas that originally lost those positions.<sup>85</sup> In fact, the manufacturing industry in the United States appear to be in the decline.<sup>86</sup> As a result, it may be time to rethink that idea and pilot test other proposal that can positively impact individuals that are still trying to recover from this downturn. Proposals, like this, are not free but they are cost effective with a defined potential ROI. While Congress is determined to reduce the overall budget, they are still interested in maintaining the economic viability of the nation.<sup>87</sup> As such, this proposal is a low risk high reward program that politicians can cite in order to show a positive impact on the lives of American and as proof that America intends to remain relevant in the ever changing global economy.

One can argue that it would take a significant amount of effort to shift the Trump Administration and Congress to support an idea that is against their driving focus, but that effort has already begun. Companies, nonprofits, and universities have begun to take this challenge on themselves and are working to gain government support to help to move the needle forward.

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<sup>85</sup> Jim Tankersley, *In the Race for Factory Jobs Under Trump, the Midwest isn't winning*, June 13, 2019.

<sup>86</sup> Andrew Van Dam, *Trump said he'd rebuild manufacturing. Now it's in decline. What happened?*, September 5, 2019.

<sup>87</sup> The Heritage Foundation, *The Plan to Save America from Bankruptcy*, July 16, 2018.

There are several major companies that have developed programs focused on hiring and training individuals from lower socioeconomic areas in order to provide a path into a higher quality of life.<sup>88</sup> Nonprofits have begun offering coding and other professional training in order to mentor and coach individuals in order to obtain technical jobs.<sup>89</sup> And as of March 2019, several leading universities have formed the Public Interest Technology University Network to assist the next generation of Americans adapt to the changing landscape of the U.S. Economy. This organization include Harvard, Stanford, MIT, and 18 other organizations focused on providing training.<sup>90</sup>

As you can see, there is already a significant push to begin addressing aspects of this issue. This proposal is focused on addressing a gap in the marketplace and allow individuals that do not want to code to enter this highly profitable field. But to accelerate the process, this proposal would require financial support to assist U.S. citizens to take and pass the certification exams outlined above. But based on the trends within the economy, the growing support in the corporate and nonprofit sector, and the relative low cost per student this proposal can be a potential win for the Department of Labor and this Administration.

## **Recommendation**

Sectary Scalia, you are fully aware of the crossroads that is in front of this nation. While there are multiple factors that can impact the economic and societal future of the United States, the Department of Labor holds a unique position. The Department of

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<sup>88</sup> Terry Turner, *15 Big Companies launch a plan to hire 100k youth from poor neighborhoods*, July 21, 2015.

<sup>89</sup> Nicole Grigg, *This non-profit will pay for your coding courses to help you enter a new job field*, April 5, 2018.

<sup>90</sup> Natasha Singer, *Top Universities Join to Push 'Public Interest Technology'*, March 11, 2019.

Labor is at the forefront of impacting the livelihoods of every American Citizens and can implement processes and programs that can change those livelihoods for the better or for the worse. This proposal is an approach that will make a positive and long-lasting change in the livelihoods of American Citizens that partake in the job training around non-programming technology jobs.

As a representative of the Department of Labor, your support of this program will result in the retraining of thousands of Americans, introduce them to highly rewarding and exciting positions, and allow them to become financially independent. This is even more vital today with the economic challenges that are facing the Millennial Generation. With your support, the program can help change the direction of that entire generation and began the process of helping them establish themselves and allow them to truly pursue the American Dream.

## Curriculum Vitae

Ibrahim Chaudhry

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### Summary

Nationality: United States of America

Born: July 9, 1991 in Chicago, IL.

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### Education

B.S. of Biology, Loyola University Chicago

2013

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### Work History

**Strive Consulting, LLC**

**9/19 – Present**

Senior Management Consultant

**CDW**

**5/19 – 9/19**

Manager of Application Development

**Strive Consulting, LLC**

**1/17 – 5/19**

Senior Management Consultant

**ATI Physical Therapy**

**2/16 – 12/16**

I.T. Consultant – Business Analyst/Project Manager

**The Mx Group**

**5/15 – 1/16**

Business Analyst

**North American Professionals and Entrepreneurial Council**

**12/12 – 5/15**

Agile Project Manager

**Benecure, Inc.**

**4/14 – 3/15**

Project Manager/Business Analyst/Product Specialist

**University of Chicago Hospital**

**5/12 – 9/12**

Research Assistant

**Loyola University Chicago**

**5/12 – 9/12**

Research Assistant

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### Nonprofit Experience

**Challenge Foundation, Inc.**

**4/11 – Present**

Executive Director

1/18 – Present

Program Manager

1/17 – 1/18

Registered Agent

6/14 – 12/16

Volunteer

4/11 – 6/14